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Our ref.: P16982US00
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application serial No.:	10/717461
Inventor:	Kjell-Tore Smith Øyvind Hammer Johansen Erlend Skjold Richard Gjersøe
For:	Pressable plastic-bound explosive composition
Group No.:	3643
Examiner:	Gellner
Attorney docket no.:	115700

DECLARATION UNDER 37 CFR 1.131

We, Kjell-Tore Smith, Øyvind Hammer Johansen, Erlend Skjold and Richard Gjersøe, hereby Declare as follows:

1. This declaration is to establish completion of the invention in a WTO country, namely Norway, at a date prior to 24 September 2002, that is the effective date of the prior art reference US 6,884,307 to Hoffman et al.
2. Prior to 24 September 2002, we completed the invention at the laboratories of Dyno Nobel ASA, Sætre, Norway, as evidenced by the following:

- a. PBXW-17 is an explosive composition that appeared at the first time as we know at a conference in Reno Nevada in 1997 with a paper given by Kirk Newman and Sharon Brown from US Navy. This reference is discussed in the specification of our application. This reference suggested that pressing pressures of over 1350 bar were required to achieve over 98% TMD (theoretical maximum density), and that pressure over 1520 bar does not noticeably increase the density of the compositions.
- b. Despite the teachings of this paper, we began as early as 1999 experimenting with pressable explosive compositions based in part upon bimodal grain compositions of RDX type I and HMX explosive crystals, together with a polyacrylic elastomer and a plasticizer. The purpose of the experiments was, inter alia, to arrive at a pressable explosive composition with a theoretical maximum density (TMD) preferably greater than 99%. If successful, the improvement from the 98% reported by Newman et al to over 99% TMD would be a substantial improvement. After marketing activities about pressable explosive compositions from Dyno Nobel to several customers, we received a request for samples for an RDX based composition from our long-term customer, Diehl in Mariahütte in Germany. This request motivated us to further develop an RDX-based explosive with improved pressability.
- c. Various compositions corresponding to our claimed invention were completed and tested prior to 24 September 2002, such compositions comprising different combinations of bimodal grain size distributions prepared using the water slurry process. Among the compositions completed and tested were compositions that comprised coarse-grained RDX (type I) class 1 together with fine-grained RDX (type I) class 5 (either with or without added HMX). Other compositions completed and tested comprised coarse-grained RDX (type I) class 7 together with fine-grained RDX (type I) class 5 (either with or without added HMX).

The grain sizes of the above-mentioned classes are well known in the art, as expressed in the military specification, MIL-DTL-398D specifying the classes. The classification of Class 1, 5 and 7 are as given in the table below:

USS Sieve number	Size of opening	Class 1 requirement % Through	Class 5 requirement % Through	Class 7 requirement % Through
20	850 μm	96 – 100		
50	300 μm	80 – 100		96 – 100
100	150 μm	30 – 90		82 – 98
200	75 μm	5 – 45		31 – 61
325	45 μm		97 – 100	

- d. Attached hereto as EXHIBIT A are exemplary copies of pages from bound laboratory notebooks showing several of the various compositions completed and tested at Dyno Nobel's pilot plant in Norway from as early as 1999. The notebook pages are dated ("Dato") and signed ("Signatur") on the dates the compositions were completed, as well as being signed and dated on the date of independent analysis of the samples ("Analysert av" and "Dato").
- e. The results of the experiments evidenced by the laboratory notebook entries are summarized in the tables attached as EXHIBIT B. (This table was previously notarized by a Notary Public on 21 March 2003). In these tables, the batch number ("Sats nummer") indicates the batch number separated by the year of the test with a "slash", for example sats nummer 83/99 being completed in the year 1999. The tables indicate, among other parameters, the amount of coarse grained RDX (RDX kl. 1) and fine grained RDX (RDX kl. 5) utilized in the composition, as well as the %TMD achieved.
- f. The first batches of the improved PBXW-17 produced at Dyno Nobel were batches number 83/99 and 84/99 produced 26-27 may 1999 under our direction by Mr. Gunnar Agersten in our pilot plant facility. These batches contained bimodal blends of Class 1 and Class 5 corresponding to the claimed invention. These two batches were sent to Diehl for testing as lot number NSI99H0001E and NSI99H0002E, respectively. Attached hereto as EXHIBIT C is the delivery report for these batches dated 30.08.1999 and signed by inventors Erlend Skjold and. Øyvind Johansen. Already at this time we found an extraordinary good pressability for this composition that was above 99.2 % TMD for one of the samples.
- g. Further development at Dyno Nobel of this composition has led us to use a somewhat finer crystal, class 7, as the course crystal. Both class 1 and class 7 are within the range of the course crystal size specified in the claims in the patent application. The first batches produced by a bimodal blend of class 7 and class 5

were batch number 506/00 and 507/00 produced 4-5 July 2000 under our direction by Mr. Jon Aage Arnesen. The pressability of these batches was above 99.2 % even at pressure as low as less than 500 bars. At normal operating pressure a density close to 100 % TMD could be obtained.

- h. In a large-scale production (200 kg/batch), the first batch with the bimodal blend of class 7 and class 5 was G-house (a specific production house) batch 6-9, produced 7-11 September 2000. Two of the batches, batch 8 and 9, were produced under our direction by Mr. Arild Heggedal and Mr. Jarl Støa. These batches were sent to Diehl for testing as lot numbers NSI00H0006E and NSI00H0007E, respectively. Attached hereto as EXHIBIT D is the delivery report dated 18. September 2000 and signed by Mr Øyvind Johansen and Dr. Kjell-Tore Smith. The pressability for these two lots was both reported to be 99.5 % TMD, pressed at about 1100 bar.

Kjell-Tore Smith date: 1/9-2000
Kjell-Tore Smith

Øyvind H. Johansen date: 1/9-2000
Øyvind Hammer Johansen

Erlend Skjold date: 1/9-2000
Erlend Skjold

Richard Gjersøe date: 1/9-2000
Richard Gjersøe

EXHIBIT A

AN-17 Sais nr: 5 Vekt: Prodsted: G Date: 8/12-99 Signatur: AH

RODAPEX Charge nr.	Vogn nr.	Mængde, kg.
1299	12	1678
164/99	F-6	44

ANALYSERESULTATER

Stk nr.	4	6	8	10	12	14	16	20	25	30
Stk nr.	35	40	50	60	80	100	200	Burn	10	100
Rd/gjenom, %										
Kumulativ, %										

Stk nr.	4	6	8	10	12	14	16	20	25	30
Stk nr.	35	40	50	60	80	100	200	Burn	10	100
Rd/gjenom, %										
Kumulativ, %										

Stk nr.	4	6	8	10	12	14	16	20	25	30
Stk nr.	35	40	50	60	80	100	200	Burn	10	100
Rd/gjenom, %										
Kumulativ, %										

Stk nr.	4	6	8	10	12	14	16	20	25	30
Stk nr.	35	40	50	60	80	100	200	Burn	10	100
Rd/gjenom, %										
Kumulativ, %										

Analysert av: Date: 10/12-99 Aktiv nr: Kontrollert av: Date: 1-19

Produkt: BKNV-17 Sais nr: 6 Vekt: 200 Prodsted: G Date: 7/10/00 Signatur: S.E

RODAPEX Charge nr.	Vogn nr.	Mængde, kg.
1236/00	F-6	88
1234/00	F-7	114,4

ANALYSERESULTATER

Stk nr.	4	6	8	10	12	14	16	20	25	30
Stk nr.	35	40	50	60	80	100	200	Burn	10	100
Rd/gjenom, %										
Kumulativ, %										

Stk nr.	4	6	8	10	12	14	16	20	25	30
Stk nr.	35	40	50	60	80	100	200	Burn	10	100
Rd/gjenom, %										
Kumulativ, %										

Stk nr.	4	6	8	10	12	14	16	20	25	30
Stk nr.	35	40	50	60	80	100	200	Burn	10	100
Rd/gjenom, %										
Kumulativ, %										

Stk nr.	4	6	8	10	12	14	16	20	25	30
Stk nr.	35	40	50	60	80	100	200	Burn	10	100
Rd/gjenom, %										
Kumulativ, %										

Analysert av: Date: 1-19 Aktiv nr: Kontrollert av: Date: 1-19

Produkt: BKNV-17 Sais nr: 7 Vekt: 198 Prodsted: G Date: 8/19/00 Signatur: S.E

RODAPEX Charge nr.	Vogn nr.	Mængde, kg.
1236/00	F-6	88
1234/00	F-7	110

ANALYSERESULTATER

Stk nr.	4	6	8	10	12	14	16	20	25	30
Stk nr.	35	40	50	60	80	100	200	Burn	10	100
Rd/gjenom, %										
Kumulativ, %										

Stk nr.	4	6	8	10	12	14	16	20	25	30
Stk nr.	35	40	50	60	80	100	200	Burn	10	100
Rd/gjenom, %										
Kumulativ, %										

Stk nr.	4	6	8	10	12	14	16	20	25	30
Stk nr.	35	40	50	60	80	100	200	Burn	10	100
Rd/gjenom, %										
Kumulativ, %										

Stk nr.	4	6	8	10	12	14	16	20	25	30
Stk nr.	35	40	50	60	80	100	200	Burn	10	100
Rd/gjenom, %										
Kumulativ, %										

Analysert av: Date: 11/15-1960 Aktiv nr: Kontrollert av: Date: 1-19

Produkt: BKNV-17 Sais nr: 8 Vekt: Prodsted: G Date: 11/9-00 Signatur: AH

RODAPEX Charge nr.	Vogn nr.	Mængde, kg.
1259/00	F-7	110
1258/00	F-6	88

ANALYSERESULTATER

Stk nr.	4	6	8	10	12	14	16	20	25	30
Stk nr.	35	40	50	60	80	100	200	Burn	10	100
Rd/gjenom, %										
Kumulativ, %										

Stk nr.	4	6	8	10	12	14	16	20	25	30
Stk nr.	35	40	50	60	80	100	200	Burn	10	100
Rd/gjenom, %										
Kumulativ, %										

Stk nr.	4	6	8	10	12	14	16	20	25	30
Stk nr.	35	40	50	60	80	100	200	Burn	10	100
Rd/gjenom, %										
Kumulativ, %										

Stk nr.	4	6	8	10	12	14	16	20	25	30
Stk nr.	35	40	50	60	80	100	200	Burn	10	100
Rd/gjenom, %										
Kumulativ, %										

Analysert av: Date: 13/15-1960 Aktiv nr: Kontrollert av: Date: 1-19

12.11.17 Sats nr. 9 Vekt: 2024 Prod.sted: G Dato: 11.10.00 Signatur: 23

Samprøve nr.	Vogn nr.	Mængde kg.
5960	17	118
5961	56	99,4

Råvarer	Bestr.	Mængde kg.	Råvarer	Bestr.	Mængde kg.
100%	3-3962	84,6	Stærktype	3-	
100%	3-3705	92,3	Parspind	3-	
100%	3-3812	14,8	Gæls	3-	
100%	3-3912	4,95	Stærktype	3-	

ANALYSERESULTATER

Sat. nr.	4	6	8	10	12	14	16	20	25	30
Pa / gjenom, %							104	13	3	0,2
Kumulativ, %										
Sat. nr.	35	40	50	60	80	100	200	Bunn	10	100
Pa / gjenom, %								0		
Kumulativ, %										
ROX nr.	410	2.2	68						0,78	
Pa / gjenom, %										
Kumulativ, %										
Falskhet vogn 1, %										
Falskhet vogn 2, %										
Falskhet vogn 3, %										
Falskhet vogn 4, %										

Anmerkninger:

Analysert av: MFE Dato: 15.10.00 Arkiv nr.: Kontrollert av: Dato: 1.10.19

Produkt: PEXW-17 Sats nr. 10 Vekt: Prod.sted: G Dato: 11.10.00 Signatur: 25

ROX nr.	Samprøve nr.	Mængde
124/161	1510	103,4
124/161	151	103,4

Råvarer	Bestr.	Mængde
100%	3-3812	9,716
100%	3-3257	3,37
100%	3-3462	88,2
100%	3-3705	82,5

Råvarer	Bestr.	Mængde
Stærktype	3-	
Parspind	3-	
Stærktype	3-	

Analyseresultatater

Sat. nr.	4	6	8	10	12	14	16	18	20	25
Pa / gjenom, %		100	99						9	
Kumulativ, %										
Sat. nr.	30	35	40	50	60	80	100	Bunn	10	100
Pa / gjenom, %						0,1				
Kumulativ, %										
ROX nr.	942									
Pa / gjenom, %										
Kumulativ, %										
Falskhet vogn 1, %										
Falskhet vogn 2, %										
Falskhet vogn 3, %										
Falskhet vogn 4, %										

Anmerkninger:

Analysert av: LJS Dato: 21.10.02 Arkiv nr.: Kontrollert av: Dato: 1.10.20

Produkt: PEXW-17 Sats nr. 11 Vekt: Prod.sted: G Dato: 13.10.00 Signatur: B.H

Samprøve nr.	Vogn nr.	Mængde kg.
698/01	17	103,4
659/02	17	103,4

Råvarer	Bestr.	Mængde
100%	3-3916	0,48
100%	3-3921	4,9
100%	3-3757	3,3
100%	3-3914	87,5

Råvarer	Bestr.	Mængde
Gæls	3-	
Stærktype	3-	
Parspind	3-	
Stærktype	3-	

Analyseresultatater

Sat. nr.	4	6	8	10	12	14	16	18	20	25
Pa / gjenom, %		100	99						10	
Kumulativ, %										
Sat. nr.	30	35	40	50	60	80	100	Bunn	10	100
Pa / gjenom, %						0				
Kumulativ, %										
ROX nr.	940									
Pa / gjenom, %										
Kumulativ, %										
Falskhet vogn 1, %										
Falskhet vogn 2, %										
Falskhet vogn 3, %										
Falskhet vogn 4, %										

Anmerkninger:

Analysert av: LJS Dato: 15.10.02 Arkiv nr.: Kontrollert av: Dato: 1.10.20

12.14

	Reaktivanz	Bestnr.	Menge
Gelatin	3.		
Farnspröd	3.		
Steatsyns	3.		
Stattmethyl KNO ₃ NO ₂	3-3715	28°C	500g

2

1111

Date: / - 20

Date: 6/6-02 Sign: A.H

Rakusnam	Pers. n.	Mengapa
Galati	3 -	
Parasitoid	3 -	
Staphilyre	3 -	
Skundermper	3 -	

11

1

1

Date: / - 20

SATS NR.: 85/99	DATO: 26/5-99	Operatorsign.: (S)
Oppdragsleder: E.H. J.	Oppdrag:	Apparatur: 150 lit.
Røreverkt: Turbin	Produkt: PBXW-17	Pros /SOP:

TILSATSER				
Råvare	Type	Best nr	Torr vekt	Val vekt
RDX kl. 1 ch. 580/99-v. 84			16.72 kg	20 kg
RDX kl. 5 ch. 726/96-v. F3			4.4 kg	6.8 kg
Hybecup 4454	Lakk		220 gr.	
DOA			660 gr.	
V.M. Etylacetat				4.8 kg
— " —	Ekstra			1.2 kg
Vann				6.6 lit.
Rhodapex			8.8 gr.	

Kl. stett	Temp °C	Røreh o/min	Dest hast	Anmerkninger
08:40	20°	500		RDX/Vann/Ekstr. Etac. / Rh.p. Vannes
08:45	40°	"		tils. lakk
08:50	42°	"		Lakk tils ferdig. damp på
09:00	72°	"		Dest. start
09:05	75°	"		Hold temp i 30 min.
09:35	76°	"		Pump på
10:25	100°	"		Hold temp i 30 min.
10:55	100°	"		Kjøling
11:10	45°	"		Nedslipp til filter. vogn

KOMMENTARER:

Utseende produkt:	Utseende reaktor:
TEOR.UTB (g):	UTBYTTE (vekt):
	UTBYTTE (%):

DYNO

SATS NR.: 84/99	DATO: 27/5-99	Operatorsign.: 657
Oppdragsleder: JH3	Oppdrag:	Apparatur: 150 Lit.
Roreverk: Turbin	Produkt: PBXW-17	Pros /SOP:

TILSATSER				
Ravare	Type	Best. nr.	Torr vekt	Våt vekt
RDX kl. 1 ch. 580/99 - U.84			11.13 kg	13.34 kg
RDX kl. 5 ch. 726/96 - U.F3			9.11 kg	14.1 kg
Hyttemp. 4454			440 gr	
Dose			1320 gr	
Etylacetat	U.F1			
Ekstra				
Vann tot.				66 Lit
Rhodapex			88 gr	

Kl. slett	Temp °C	Roreh. o/min	Dest hast	Anmerkninger
08:25	20°	500		RDX/Vann/Rhe/Ekst. Etac/Vann
08:40	41°	"		tils lakk start
08:48	42°	"		Lakk tils. ferdig damp p
08:10	72°	"		Dest. start
08:20	75°	"		Hold temp i 30 min.
08:50	76°	"		Damp på igjen
10:00	86°	"		Skummer en del.
10:17	100°	"		Hold temp i 30 min.
10:47	100°	"		Kjøling
	45°	"		

KOMMENTARER: Lakken virket lykk, men var ikke steint.
(Kanskje var vann for mye vann i Etylacetaten.)

Utseende produkt.	Utseende reaktor:
TEOR.UTB (g):	UTBYTTE (vekt):
	UTBYTTE (%):

DYNO

SATS NR.: 506/00	DATO: 4/7-00	Operatørsign.: JAA
Oppdragsleder: KTI	Oppdrag: 006/99	Apparatur: 1501
Røreverkt: turbin	Produkt: PDXW-12	Pros./SOP: 006/99-C-06

TILSATSER

Råvare	Type	Best nr.	Torr vekt	Vat vekt
ch 1571/98 V.81	K1 2		9,2 kg	11,3 kg
ch 593/99 F.8	K1 5		4,6 kg	6,5 kg
VANIL		(31+41: RDX)		3,5 kg
Ekstra vann rett	Et/c.c			1 kg
Ekstra vann rett				2,5 kg
Rhodapex	CO-436			6 g
Dindemiddel	Sat, 298/00			ca 6 kg

Kl. stett	Temp °C	Røreh. o/min	Dest. hast.	Anmerkninger
11 20	17,2	250		SATSET RDX-351 vann - 1 kg Ekstra-Rhodapex
12 10	45,3			stærk tårn av 10 L
12 15	44,7			Først - 30 min
12 45	43,7	280-350		tilsett ekstra vann
12 45	36,0	350		laveste temp.
13 05	20,1			dest. styrk
13 10	75			30 min
13 40	74,8			vann
14 10	100			15 min
14 25	100,4			hijting
14 50	50			bedrivning til j. 1/100000

KOMMENTARER:

Utseende produkt: ch, mon milt	Utseende reaktor:
TEOR.UTB (g):	UTBYTTE (vekt): 5 kg
	UTBYTTE (%):

DYNO

SATS NR.: 507/00	DATO: 5/7-00	Operatorsign.: 142
Oppdragsleder: HTI	Oppdrag: 006/99	Apparatur: 1501
Roreverk: turbin	Produkt: PDXW-12	Pros /SOP: 006/99-0-00

TILSATSER

RDX

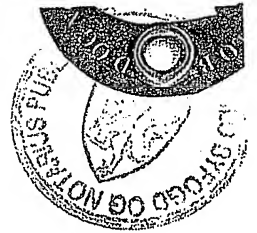
Råvare	Type	Best. nr.	Torr vekt	Vat vekt
ch 1571/98 U.81	417		7.8 kg	7.6 kg
ch 590/99 F.8	415		6.0 kg	8.5 kg
Vann			(21 + 4)	35 kg
Ekst. vannmelte	et/91			1 kg
Ekst. vann				25 kg
Rhodeprox	CO-436			6 g
Dindemiddel	Sat, 299/00			99.6 kg

Kl stelt	Temp. °C	Roreh. o/min	Dest hast.	Anmerkninger
8 25	19	250		UAVK - RDX - 1 kg et/91 - Rhodaprox, vann.
9 10	42.6	"		Start 24, ca 1.6 kg
9 12	42.6	"		Feed - 11 - 30 min
9 22	42.6	250-350		Ufattet ekst. vann, vann, laveste temp
	68.6	330		dest. start
10 02	75			30 min
10 23	76			vann
11 05	100			10 min
11 20	100			hjelning
11 40	100			høst 1/10, myk stg

KOMMENTARER:

Utseende produkt:		Utseende reaktor:	
TEOR.UTB (g):	UTBYTTE (vekt):	14 kg	UTBYTTE (%):

EXHIBIT B



Sammenligning av PBXW-17 satter

Produksjon	Uke 12	Uke 17	Uke 19	Uke 23	Uke 29	Uke 33	Uke 39	Uke 43	Uke 47	Uke 48	Uke 49	Uke 49
Sats nummer	83199	84199	33199	332199	333199	334199	357199	367199	370199	374199	375199	
Angi Satsstørrelse (kg)	22	22	22	22	22	22	22	22	22	22	15	15
Angi Laktors: (Vekt %)	15,5	15,5	15,5	15,5	15,5	15,5	15,5	15,5	15,5	15,5	15,4	15,4
Angi total lsm mengde (hvis extra lsm)	6	10,3	5,4	6	6	5,4	6,7	7,2	7,2	4,5	6	6
Angi vannmengde (kg)	66	66	66	66	66	66	28	66	66	25	25	25
Angi total vannmengde	66	66	66	66	66	66	66	66	66	60	60	60
% andel sprengstoff	96	92	96	96	96	96	96	96	96	96	96	96
% andel av kl 5 (komposisjonen)	20	41,41	43,23	43,23	57,59	57,59	20	20	20	20	20	20
Vann/Masse(sprengstoff) forhold	3,125	3,2606596	3,125	3,125	3,125	3,125	1,325758	3,125	3,125	1,735111	1,735111	
Satsing												
Mengde Hylmp (kg)	0,22	0,44	0,22	0,22	0,22	0,22	0,22	0,22	0,22	0,15	0,15	
Mengde DOA (kg)	0,66	1,32	0,66	0,66	0,66	0,66	0,66	0,66	0,66	0,45	0,45	
Mengde DOA (kg)	4,80	9,59	4,80	4,80	4,80	4,80	4,80	4,80	4,80	3,30	3,30	
Mengde DOA (kg)	16,72	33,44	16,72	16,72	16,72	16,72	16,72	16,72	16,72	11,40	11,40	
RDX Kl 5 Silverset (g)	4,70	9,40	4,70	4,70	4,70	4,70	4,70	4,70	4,70	3,00	3,00	
RDX Kl 5 Silverset (g)	8,80	17,60	8,80	8,80	8,80	8,80	8,80	8,80	8,80	6,00	6,00	
Rhodapex (gram)	8,80	17,60	8,80	8,80	8,80	8,80	8,80	8,80	8,80	6,00	6,00	
Mengde Lakt (kg)	1,20	2,40	1,20	1,20	1,20	1,20	1,20	1,20	1,20	0,80	0,80	
Ekstra Lakt (kg)	65,84	131,68	65,84	65,84	65,84	65,84	27,84	65,84	65,84	24,89	24,89	
Mengde Quenchvann	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	
Beregning												
Mengde bindemiddel lakt (kg)	0,88	1,76	0,88	0,88	0,88	0,88	0,88	0,88	0,88	0,60	0,60	
Vekt % bindemiddel lakt	6,55	12,22	6,55	6,55	6,55	6,55	14,74	6,55	6,55	11,26	11,26	
Vekt % bindemiddel lakt	8,06	16,12	8,06	8,06	8,06	8,06	18,67	8,06	8,06	14,75	14,75	
Vekt % bindemiddel lakt	1,28	2,56	1,28	1,28	1,28	1,28	2,56	1,28	1,28	0,80	0,80	
Mengde org. fase (kg) etter quench	1,28	2,56	1,28	1,28	1,28	1,28	2,56	1,28	1,28	0,80	0,80	
Kommentar												
Om- arbeid av sats 1 11501												
Redusert rørhastig het til 350 rpm												
Frikjons koeffisien ten er et minimum												
SIK #12	97	97	99,6	99,6	99,6	99,6	99,6	99,6	99,6	99,6	99,6	99,6
SIK #16	96	97,8	99,4	99,4	99,4	99,4	99,6	99,6	99,6	99,6	99,6	99,6
SIK #20	92	96	97,7	96,3	87,4	96,5	74,9	98,6	95,2	72	97,4	97,4
SIK #25	60	78	94,7	82,4	92,9	93,5	42	92,1	83,9	46,8	94,7	94,7
SIK #30	27	31	84,5	77	80	98,2	21,3	70,9	62,7	19,5	90,8	90,8
SIK #35	14											
SIK #40	4	0,1	64,3	49,2	46,6	97,8	6,2	24,6	24,4	2,4	80,6	80,6
SIK #45							0,8	1,9	3,1	0,1	23,6	23,6
SIK #50												
SIK #55												
SIK #60												
SIK #65												
SIK #70												
SIK #75												
SIK #80												
Volumvekt g/ml (min 0,8)	0,95	0,93	0,87	0,85	0,85	0,83	0,84	0,89	0,82	0,85	0,75	12
Flyer gjennom skivestørrelse (mm)	5	6,5					5	6	6,5	5		
Sammensetning	RDX	95,5	98,2	98,2	98,2	98,2	98,2	98,2	98,2	98,2	98,2	98,2
	Hylmp	1,1	1,0	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9
	DOA	3,4	3,4	2,8	2,9	2,8	2,8	2,8	2,8	3	3	3
Pressehelhet	1,719	1,650	1,698	1,698	1,695	1,693	1,699	1,694	1,692	1,687	1,692	1,692
%TMD	99,247	97,410	97,438	97,467	97,206	97,002	97,674	97,327	97,272	96,925	97,272	97,272
Frikjonskoeffisient lakt/min	116,4	148,1					102,9	130,8	130,6	104,1	220,5	220,5

Figure 1

Produksjon				Uke 47		Uke 48	Uke 49	Uke 50
Sats nummer	1/99 (G)	2/99 (G)	Sats 3	Ch 3/99	Sats 4	Sats 5	Ch 4/99	Ch 4/99
Angi Satsløstrelse (kg)	275	275	275		275	220		220
Angi Løstkons. (vekt %)	15,385	15,385	15,5		15,5	15,5		15,5
Angi total løsn.menge (hvis extra løsn)	75,5	75,5	94		94	67		67
Angi vannmengde (kg)	825	825	350		350	365		365
Angi total vannmengde	825	825	825		825	880		880
% andel sprengstoff	96	96	96		96	96		96
% andel av K 5.5 (komposisjonen)	20	20	20		20	20		20
Vann/Massest (sprengstoff)/holdid	3,125	3,125	1,925/58	#DIV/0!	1,925/58	1,172822		1,172822
Satsing								
Mengde Hyemp (kg)	2,75	2,75	2,75		2,75	2,20		2,20
Mengde DOA (kg)	8,25	8,25	8,25		8,25	6,80		6,60
Løsningsmiddel (ulrakk (kg))	60/50	60/50	59/97		59/97	47/97		47/97
RDX K1 (kg)	209/00	209/00	209/00		209/00	167/20		167/20
RDX K1.5 Sullivan (kg)	55/00	55/00	55/00		55/00	24/00		24/00
Rhodapex (gram)	110/00	110/00	110/00		110/00	88/00		88/00
Mengde lakk (kg)	74,96	70,56	70,97		70,97	56,77		56,77
Ekstra Løsningsmiddel (kg)	15/00	15/00	31/09	#VALUE!	31/09	19/03		19/03
Vann (kg)	923/00	923/00	248/02		248/02	263/42		363/42
Mengde Quenchvann	0,00	0,00	475/00	0,00	475/00	515/00		515/00
Belegninger								
Mengde bindemiddel Lakkren (kg)	14/00	11/00	11/00		11/00	8,80		8,80
Væske Løsningsmiddel Itallackren	6/61	6/61	14/14		14/14	11/23		11/23
Væske Løsningsmiddel Itallackren	8/11	8/11	20/47	#VALUE!	20/47	12/30		15/00
Mengde organisk Løse (kg)	16,45	16,45	70/50		70/50	11/74		11/74
Mengde org. løse (kg) ved quench	16,45	16,45	35/41		35/41	8/68		8/68
Kommentar		Redusert retnings- til 180	Om- arbeiding av sats 1 1-Ghus	Sats 3 er gjort til change	Om- arbeiding av sats 2 1-Ghus	1131/09		Sats 5:
Sikt #8								
Sikt #12								
Sikt #16	98,3	99	95,3		94,5			96
Sikt #20	94,8	91,1	77,1		77,2			69
Sikt #26	89,2	79,7	28,8		50,1			42
Sikt #30	80,3	68,1	12,3		24			15
Sikt #35	81,3	63,1						7
Sikt #40	58,7	22	2,6		9,7			1
Sikt #60	3,5	7,4	0,2		0,3			
Sikt #80					0			
Volumvekt (g/ml (min 0,8)	0,71	0,74	0,76	0,76	0,74	0,85		0,85
Flyter gjennom sikveløstrelse (mm)				7		5		5
Sammensetning	RDX	86/9		96,2	95,8	96		95/9
	Hyemp	1,2	1,2	1,1	1,3	1,1		1,0
	DOA	2,6	2,9	2,5	2,57	2,9		2,1
Presseleitet	1,694	1,695		1,699	1,689			1,691
%TMD	97,150	97,475	0,000		97,181	0,000		97,303
Effektivskoeffisient maksimum				130/3		104,1		104,1

PBXW-17 med klasse 7.xls

Produksjon		134/00	135/00	139/00	140/00	169/00	174/00	176/00	182/00	185/00	177/00	181/00	183/00	185/00	187/00	189/00	191/00	193/00	195/00	197/00	199/00	201/00	203/00	205/00	207/00	209/00	211/00	213/00	215/00	217/00	219/00	221/00	223/00	225/00	227/00	229/00	231/00	233/00	235/00	237/00	239/00	241/00	243/00	245/00	247/00	249/00	251/00	253/00	255/00	257/00	259/00	261/00	263/00	265/00	267/00	269/00	271/00	273/00	275/00	277/00	279/00	281/00	283/00	285/00	287/00	289/00	291/00	293/00	295/00	297/00	299/00	301/00	303/00	305/00	307/00	309/00	311/00	313/00	315/00	317/00	319/00	321/00	323/00	325/00	327/00	329/00	331/00	333/00	335/00	337/00	339/00	341/00	343/00	345/00	347/00	349/00	351/00	353/00	355/00	357/00	359/00	361/00	363/00	365/00	367/00	369/00	371/00	373/00	375/00	377/00	379/00	381/00	383/00	385/00	387/00	389/00	391/00	393/00	395/00	397/00	399/00	401/00	403/00	405/00	407/00	409/00	411/00	413/00	415/00	417/00	419/00	421/00	423/00	425/00	427/00	429/00	431/00	433/00	435/00	437/00	439/00	441/00	443/00	445/00	447/00	449/00	451/00	453/00	455/00	457/00	459/00	461/00	463/00	465/00	467/00	469/00	471/00	473/00	475/00	477/00	479/00	481/00	483/00	485/00	487/00	489/00	491/00	493/00	495/00	497/00	499/00	501/00	503/00	505/00	507/00	509/00	511/00	513/00	515/00	517/00	519/00	521/00	523/00	525/00	527/00	529/00	531/00	533/00	535/00	537/00	539/00	541/00	543/00	545/00	547/00	549/00	551/00	553/00	555/00	557/00	559/00	561/00	563/00	565/00	567/00	569/00	571/00	573/00	575/00	577/00	579/00	581/00	583/00	585/00	587/00	589/00	591/00	593/00	595/00	597/00	599/00	601/00	603/00	605/00	607/00	609/00	611/00	613/00	615/00	617/00	619/00	621/00	623/00	625/00	627/00	629/00	631/00	633/00	635/00	637/00	639/00	641/00	643/00	645/00	647/00	649/00	651/00	653/00	655/00	657/00	659/00	661/00	663/00	665/00	667/00	669/00	671/00	673/00	675/00	677/00	679/00	681/00	683/00	685/00	687/00	689/00	691/00	693/00	695/00	697/00	699/00	701/00	703/00	705/00	707/00	709/00	711/00	713/00	715/00	717/00	719/00	721/00	723/00	725/00	727/00	729/00	731/00	733/00	735/00	737/00	739/00	741/00	743/00	745/00	747/00	749/00	751/00	753/00	755/00	757/00	759/00	761/00	763/00	765/00	767/00	769/00	771/00	773/00	775/00	777/00	779/00	781/00	783/00	785/00	787/00	789/00	791/00	793/00	795/00	797/00	799/00	801/00	803/00	805/00	807/00	809/00	811/00	813/00	815/00	817/00	819/00	821/00	823/00	825/00	827/00	829/00	831/00	833/00	835/00	837/00	839/00	841/00	843/00	845/00	847/00	849/00	851/00	853/00	855/00	857/00	859/00	861/00	863/00	865/00	867/00	869/00	871/00	873/00	875/00	877/00	879/00	881/00	883/00	885/00	887/00	889/00	891/00	893/00	895/00	897/00	899/00	901/00	903/00	905/00	907/00	909/00	911/00	913/00	915/00	917/00	919/00	921/00	923/00	925/00	927/00	929/00	931/00	933/00	935/00	937/00	939/00	941/00	943/00	945/00	947/00	949/00	951/00	953/00	955/00	957/00	959/00	961/00	963/00	965/00	967/00	969/00	971/00	973/00	975/00	977/00	979/00	981/00	983/00	985/00	987/00	989/00	991/00	993/00	995/00	997/00	999/00	1001/00	1003/00	1005/00	1007/00	1009/00	1011/00	1013/00	1015/00	1017/00	1019/00	1021/00	1023/00	1025/00	1027/00	1029/00	1031/00	1033/00	1035/00	1037/00	1039/00	1041/00	1043/00	1045/00	1047/00	1049/00	1051/00	1053/00	1055/00	1057/00	1059/00	1061/00	1063/00	1065/00	1067/00	1069/00	1071/00	1073/00	1075/00	1077/00	1079/00	1081/00	1083/00	1085/00	1087/00	1089/00	1091/00	1093/00	1095/00	1097/00	1099/00	1101/00	1103/00	1105/00	1107/00	1109/00	1111/00	1113/00	1115/00	1117/00	1119/00	1121/00	1123/00	1125/00	1127/00	1129/00	1131/00	1133/00	1135/00	1137/00	1139/00	1141/00	1143/00	1145/00	1147/00	1149/00	1151/00	1153/00	1155/00	1157/00	1159/00	1161/00	1163/00	1165/00	1167/00	1169/00	1171/00	1173/00	1175/00	1177/00	1179/00	1181/00	1183/00	1185/00	1187/00	1189/00	1191/00	1193/00	1195/00	1197/00	1199/00	1201/00	1203/00	1205/00	1207/00	1209/00	1211/00	1213/00	1215/00	1217/00	1219/00	1221/00	1223/00	1225/00	1227/00	1229/00	1231/00	1233/00	1235/00	1237/00	1239/00	1241/00	1243/00	1245/00	1247/00	1249/00	1251/00	1253/00	1255/00	1257/00	1259/00	1261/00	1263/00	1265/00	1267/00	1269/00	1271/00	1273/00	1275/00	1277/00	1279/00	1281/00	1283/00	1285/00	1287/00	1289/00	1291/00	1293/00	1295/00	1297/00	1299/00	1301/00	1303/00	1305/00	1307/00	1309/00	1311/00	1313/00	1315/00	1317/00	1319/00	1321/00	1323/00	1325/00	1327/00	1329/00	1331/00	1333/00	1335/00	1337/00	1339/00	1341/00	1343/00	1345/00	1347/00	1349/00	1351/00	1353/00	1355/00	1357/00	1359/00	1361/00	1363/00	1365/00	1367/00	1369/00	1371/00	1373/00	1375/00	1377/00	1379/00	1381/00	1383/00	1385/00	1387/00	1389/00	1391/00	1393/00	1395/00	1397/00	1399/00	1401/00	1403/00	1405/00	1407/00	1409/00	1411/00	1413/00	1415/00	1417/00	1419/00	1421/00	1423/00	1425/00	1427/00	1429/00	1431/00	1433/00	1435/00	1437/00	1439/00	1441/00	1443/00	1445/00	1447/00	1449/00	1451/00	1453/00	1455/00	1457/00	1459/00	1461/00	1463/00	1465/00	1467/00	1469/00	1471/00	1473/00	1475/00	1477/00	1479/00	1481/00	1483/00	1485/00	1487/00	1489/00	1491/00	1493/00	1495/00	1497/00	1499/00	1501/00	1503/00	1505/00	1507/00	1509/00	1511/00	1513/00	1515/00	1517/00	1519/00	1521/00	1523/00	1525/00	1527/00	1529/00	1531/00	1533/00	1535/00	1537/00	1539/00	1541/00	1543/00	1545/00	1547/00	1549/00	1551/00	1553/00	1555/00	1557/00	1559/00	1561/00	1563/00	1565/00	1567/00	1569/00	1571/00	1573/00	1575/00	1577/00	1579/00	1581/00	1583/00	1585/00	1587/00	1589/00	1591/00	1593/00	1595/00	1597/00	1599/00	1601/00	1603/00	1605/00	1607/00	1609/00	1611/00	1613/00	1615/00	1617/00	1619/00	1621/00	1623/00	1625/00	1627/00	1629/00	1631/00	1633/00	1635/00	1637/00	1639/00	1641/00	1643/00	1645/00	1647/00	1649/00	1651/00	1653/00	1655/00	1657/00	1659/00	1661/00	1663/00	1665/00	1667/00	1669/00	1671/00	1673/00	1675/00	1677/00	1679/00	1681/00	1683/00	1685/00	1687/00	1689/00	1691/00	1693/00	1695/00	1697/00	1699/00	1701/00	1703/00	1705/00	1707/00	1709/00	1711/00	1713/00	1715/00	1717/00	1719/00	1721/00	1723/00	1725/00	1727/00	1729/00	1731/00	1733/00	1735/00	1737/00	1739/00	1741/00	1743/00	1745/00	1747/00	1749/00	1751/00	1753/00	1755/00	1757/00	1759/00	1761/00	1763/00	1765/00	1767/00	1769/00	1771/00	1773/00	1775/00	1777/00	1779/00	1781/00	1783/00	1785/00	1787/00	1789/00	1791/00	1793/00	1795/00	1797/00	1799/00	1801/00	1803/00	1805/00	1807/00	1809/00	1811/00	1813/00	1815/00	1817/00	1819/00	1821/00	1823/00	1825/00	1827/00	1829/00	1831/00	1833/00	1835/00	1837/00	1839/00	1841/00	1843/00	1845/00	1847/00	1849/00	1851/00	1853/00	1855/00	1857/00	1859/00	1861/00	1863/00	1865/00	1867/00	1869/00	1871/00	1873/00	1875/00	1877/00	1879/00	1881/00	1883/00	1885/00	1887/00	1889/00	1891/00	1893/00	1895/00	1897/00	1899/00	1901/00	1903/00	1905/00	1907/00	1909/00	1911/00	1913/00	1915/00	1917/00	1919/00	1921/00	1923/00	1925/00	1927/00	1929/00	1931/00	1933/00	1935/00	1937/00	1939/00	1941/00	1943/00	1945/00	1947/00	1949/00	1951/00	1953/00	1955/00	1957/00	1959/00	1961/00	1963/00	1965/00	1967/00	1969/00	1971/00	1973/00	1975/00	1977/00	1979/00	1981/00	1983/00	1985/00	1987/00	1989/00	1991/00	1993/00	1995/00	1997/00	1999/00	2001/00	2003/00	2005/00	2007/00	2009/00	2011/00	2013/00	2015/00	2017/00	2019/00	2021/00	2023/00	2025/00	2027/00	2029/00	2031/00	2033/00	2035/00	2037/00	2039/00	2041/00	2043/00	2045/00	2047/00	2049/00	2051/00	2053/00	2055/00	2057/00	2059/00	2061/00	2063/00	2065/00	2067/00	2069/00	2071/00	2073/00	2075/00	2077/00	2079/00	2081/00	2083/00	2085/00	2087/00	2089/00	2091/00	2093/00	2095/00	2097/00	2099/00	2101/00	2103/00	2105/00	2107/00	2109/00	2111/00	2113/00	2115/00	2117/00	2119/00	2121/00	2123/00	2125/00	2127/00	2129/00	2131/00	2133/00	2135/00	2137/00	2139/00	2141/00	2143/00	2145/00	2147/00	2149/00	2151/00	2153/00	2155/00	2157/00	2159/00	2161/00	2163/00	2165/00	2167/00	2169/00	2171/00	2173/00	2175/00	2177/00	2179/00	2181/00	2183/00	2185/00	2187/00	2189/00	2191/00	2193/00	2195/00	2197/00	2199/00	2201/00	2203/00	2205/00	2207/00	2209/00	2211/00	2213/00	2215/00	2217/00	2219/00	2221/00	2223/00	2225/00	2227/00	2229/00	2231/00	2233/00	2235/00	2237/00	2239/00	2241/00	2243/00	2245/00	2247/00	2249/00	2251/00	2253/00	2255/00	2257/00	2259/00	2261/00	2263/00	2265/00	2267/00	2269/00	2271/00	2273/00	2275/00	2277/00	2279/00	2281/00	2283/00	2285/00	2287/00	2289/00	2291/00
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Satsberegning for PBXW-17

Produktion	Sals 6	Sals 7	Sals 8	Sals 9	CH 6/00	CH 7/00	Uke 4/01
Sals nummer	224,4	216,5	220	220			15
Ansl Satslønse (kg)	23,8095	20	23,8095	20			23,8095
Ansl lakkons (vekt %)	85,06667	85,06667	85,06667	85,06667			5,8
Ansl total lsm mengde (lvs extra lsm)	513,3333	513,3333	513,3333	513,3333			35
Ansl yamemengde (kg)	880	880	880	880			60
Ansl total yamemengde	39,22	40,32	50	50			50
% andel N 5	2,45	2,04	2,5	2	2,5	2	2,25
% andel Hyemp	7,35	6,12	7,5	6	7,5	6	6,75
% andel DOA							
Satsing	5,50	32,40	5,50	5,50			0,3375
Mengde Hyemp	16,19	16,519	16,5000	16,5000			1,0125
Mengde DOA	70,37	70,37	70,37	70,37			4,3200
Mengde lakk (kg)	10,4402	10,440	10,4400	10,4400			6,1592
RDxK17(kg)	88,01	88,01	88,000	88,000			6,8000
RDxK15(kg)	88,76	88,76	88,760	88,760			6,8000
RDxK16(kg)	202,41	198,01	198,00	202,40			13,65
Mengde Sprengstoff	2,96	3,02	3,02	2,96			2,99
Forhold Væskesprengstoff, på vekt	5,70	5,83	5,83	5,70			5,76
Mengde lakk (kg)	92,062	87,966	92,400	98,000			5,670
Ekstra lakkemiddel (kg)	513,33	513,33	513,33	513,33			1,48
Mengde lakkemiddel (kg)	386,67	386,67	386,67	386,67			1,2500
Beregning							3,92
Væskesprengstoff	2,96	3,02	3,02	2,96			2,99
Væskelakkemiddel	14,66	14,66	14,66	14,66			1,0625
Væskelakkemiddel	13,75	13,75	13,75	13,75			0,852
Væskelakkemiddel	8,62	8,62	8,62	8,62			0,360
Mengde lakkemiddel (kg)	19,27	19,27	19,27	19,27			1,313
Mengde lakkemiddel (kg)	22,193	22,193	22,193	22,193			1,513
Kommentar							
					Buht	Buht sals	
					Sals 8	9	
SK#4					39,81	100	
SK#46	47,31	56,75	59	64	69	56,7	
SK#20	7,3	14,37	10	19	15	9,84	
SK#29	2,23	2,23	3,3	1,61			
SK#30	0,23	0,23	0,7	0,12		0,23	
SK#40	0,04	0,04	0,2	0,15		0,15	
SK#80	0,04	0,04	0,2	0,15		0,15	
SK#802	0,78	0,77	0,76	0,76	0,80	0,78	
Volymvekt g/ml (min 0,8)							
Fløt gjennom skiveåpning (mm)	9,47	9,47	9,12	9,12	9,12	9,12	
Skiveåpning	1,52	1,52	1,2	1,2	1,2	1,2	
DOA	6,04	6,04	6,04	6,04	6,04	6,04	
Fallhøyde (RDx Cl 5 Ref. I parantes)					1,670	1,680	
Presseleitet	1,682	1,671	1,672	1,669	1,675	1,667	1,669
TMD					99,676	99,584	
% TMD							
Emisjonskoeffisient i m3/min							

EXHIBIT C

DYNO

Defence Products
N-3475 Sætre
Norway

DELIVERY REPORT

Subject: PBXW-17

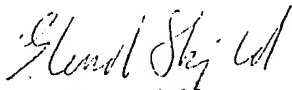
Date: 30.08.99

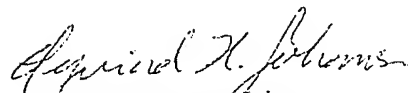
ANALYSIS OF PBXW-17

Buyer : Karl Diehl Mariahütte
Postfach 1163, D-66616 Nonnweiler
Forbundsrep. Tyskland
Order no : Mr. Wild 14.04.99 (x-6715 C)
Quantity : 20 kg
Lot no. : NSI99H0001E
Charge no. : Charge no.1/99
Supplier : DYNO ASA, Defence Products

	Found	Nominal value
RDX	95.5 %	96.0 %
HyTemp 4454	1.1 %	1.0 %
Diethylhexyladipate, DOA	3.4 %	3.0 %
Moisture	0.02 %	Max. 0.10 %
Foreign matter	0	0
Impact Sensitivity (BAM)	33 J	
Pressability (1.1 t/cm ² , 60 s, RT)	1.719 g/cm ³	
Bulk Density	0.95 g/cm ³	
Sieve analysis		
Through USS Sieve No. 16	95 %	
Through USS Sieve No. 20	82 %	
Through USS Sieve No. 25	60 %	
Through USS Sieve No. 30	27 %	
Through USS Sieve No. 35	14 %	
Through USS Sieve No. 40	4 %	

DYNO Defence Products


Erlend Skjold
R&D Manager


Øyvind Hammer Johansen
Scientist

DYNO

Defence Products
N-3475 Saetre
Norway

DELIVERY REPORT

Subject: PBXW-17

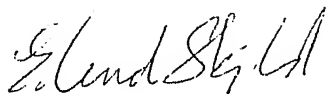
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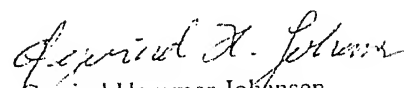
ANALYSIS OF PBXW-17

Buyer : Karl Diehl Mariahütte
Postfach 1163, D-66616 Nonnweiler
Forbundsrep. Tyskland
Order no : Mr. Wild 14.04.99 (x-6715 C)
Quantity : 20 kg
Lot no. : NSI99H0002E
Charge no. : Charge no.2/99
Supplier : DYNO ASA, Defence Products

	Found	Nominal value
RDX	92.8 %	92.0 %
HyTemp 4454	1.8 %	2.0 %
Diethylhexyladipate, DOA	5.4 %	6.0 %
Moisture	0.02 %	Max. 0.10 %
Foreign matter	0	0
Impact Sensitivity (BAM)	18.8 J	
Pressability (1.1 t/cm ² , 60 s, RT)	1.650 g/cm ³	
Bulk Density	0.93 g/cm ³	
Sieve analysis		
Through USS Sieve No. 8	100 %	
Through USS Sieve No. 12	97 %	
Through USS Sieve No. 16	78 %	
Through USS Sieve No. 20	36 %	
Through USS Sieve No. 25	18 %	
Through USS Sieve No. 30	3 %	
Through USS Sieve No. 40	0.1 %	

DYNO Defence Products


Erlend Skjold
R&D Manager


Øyvind Hammer Johansen
Scientist

DYNO

Defence Products
N-3475 Sætre
Norway

Produksjon og analysemelding fra FoU-avdelingen

Dato: 25. August 1999

Produkt: PBXW-17		
Mengde: 20 kg	Charge nummer: 1/99	Lot nummer: NSI99H0001E
Kunde: Karl Diehl Mariahütte, Tyskland	Lev. tid: Uke 35/99	Best.nummer: Mr. Wild (x-6715 C)
Produkt spesifikasjon:		
Råvare (komponent) spesifikasjon: HyTemp 4454: WS 32630, DOA: DOD-D-23443 HMX: MIL-H-45444, grade B		
Emballasje: 1 Pappfat		

Råvarer benyttet:

Sats nummer	Lot.nummer	Type	Mengde
Sats 83/99 (PP-1)		PBXW-17	22 kg

Anmerkninger:

Rapporteres av FoU.¹

¹Distibusjon: A.Sværen/ A.Gregersen, R.Sorli, B. Berhardsen , FoU-arkiv

DYNO

Defence Products
N-3475 Saetre
Norway

Produksjon og analysemelding fra FoU-avdelingen

Dato: 25. August 1999

Produkt: PBXW-17		
Mengde: 20 kg	Charge nummer: 2/99	Lot nummer: NSI99H0002E
Kunde: Karl Diehl Mariahütte, Tyskland	Lev. tid: Uke 35/99	Best.nummer: Mr. Wild (x-6715 C)
Produkt spesifikasjon:		
Råvare (komponent) spesifikasjon: HyTemp 4454: WS 32630, DOA: DOD-D-23443 HMX: MIL-H-45444, grade B		
Emballasje: 1 Pappfat		

Råvarer benyttet:

Sats nummer	Lot.nummer	Type	Mengde
Sats 84/99 (PP-1)		PBXW-17	22 kg

Anmerkninger:

Rapporteres av FoU.²

²Distibusjon: A.Sværen/ A.Gregersen, R.Sørli, B. Berhardsen , FoU-arkiv

EXHIBIT D

DYNO
Dyno Nobel

Defence Products
N-3476 Saetre
Norway

SPECIFIC TEST REPORT

DELIVERY REPORT

VERHS PRIVBUDENS

Subject: PBXW-17

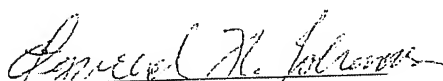
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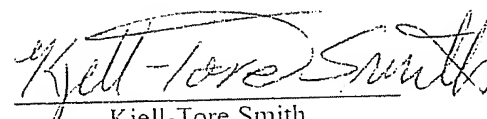
ANALYSIS OF PBXW-17

Buyer : Karl Diehl Mariahütte
Postfach 1163,
D-66616 Nonnweiler
Forbundsrep. Tyskland
Order no : 319336 (x-6965B)
Quantity : 50 kg
Lot no. : NSI00H0007E
Charge no. : Charge no.07/00
Supplier : DYNO NOBEL ASA, Defence Products

	Found	Nominal value
RDX	90.9 %	91.0 ± 2.0 %
HyTemp 4454	2.1 %	2.25 ± 0.75 %
Diethylhexyladipate, DOA	7.0 %	6.75 ± 1.25 %
Moisture	0.02 %	Max. 0.10 %
Foreign matter	0	0
Vacuum thermal stability (VTS)	0.05 mL/g	0.5 mL/g
Impact Sensitivity (BAM)	20 J	4 J (RDX Cl. 5 reference)
Pressability (1.1 t/cm ² , 60 s, RT)	1.66 g/cm ³ (99.5 %TMD)	Informative
Bulk Density	0.78 g/cm ³	0.75 g/cm ³
Sieve analysis	% Through	
Through USS Sieve No. 8 (2360 µ)	100 %	Informative
Through USS Sieve No. 16 (1180 µ)	56 %	Informative
Through USS Sieve No. 20 (850 µ)	9 %	Informative
Through USS Sieve No. 30 (600 µ)	0 %	Informative
Through USS Sieve No. 80 (180 µ)	0 %	Informative

DYNO NOBEL ASA
Defence Products


Øyvind Hantmer Johansen
R&D Manager


Kjell-Tore Smith
Scientist

DYNO

Dyno Nobel

Defence Products
N-3476 Sætre
Norway

DELIVERY REPORT

Subject: PBXW-17

Date: 18.09.00

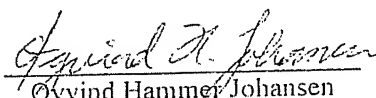
ANALYSIS OF PBXW-17

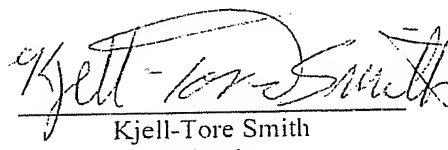
Buyer : Karl Diehl Mariahütte
Postfach 1163,
D-66616 Nommweiler
Forbundsrep. Tyskland
Order no : 319336 (x-6965B)
Quantity : 50 kg
Lot no. : NSI00H0006E
Charge no. : Charge no.06/00
Supplier : DYNO NOBEL ASA, Defence Products

	Found	Nominal value
RDX	91.5 %	91.0 ± 2.0 %
HyTemp 4454	2.0 %	2.25 ± 0.75 %
Diethylhexyladipate, DOA	6.5 %	6.75 ± 1.25 %
Moisture	0.02 %	Max. 0.10 %
Foreign matter	0	0
Vacuum thermal stability (VTS)	0.06 mL/g	0.5 mL/g
Impact Sensitivity (BAM)	15 J	4 J (RDX Cl. 5 reference)
Pressability (1.1 t/cm ² , 60 s, RT)	1.67 g/cm ³ (99.5 %TMD)	Informative
Bulk Density	0.80 g/cm ³	0.75 g/cm ³

Sieve analysis	% Through	
Through USS Sieve No. 8 (2360 µ)	100 %	Informative
Through USS Sieve No. 16 (1180 µ)	69 %	Informative
Through USS Sieve No. 20 (850 µ)	15 %	Informative
Through USS Sieve No. 30 (600 µ)	1 %	Informative
Through USS Sieve No. 80 (180 µ)	0 %	Informative

DYNO NOBEL ASA
Defence Products


Øyvind Hammer Johansen
R&D Manager


Kjell-Tore Smith
Scientist

Produksjon og analysemelding fra FoU-avdelingen

Dato: 18. september 2000

Produkt: PBXW-17		
Mengde: 50 kg	Charge nummer: 07/00	Lot nummer: NSI00H0007E
Kunde: Karl Diehl Mariahütte, Tyskland	Lev. tid: Uke 38/00	Best.nummer: 319336 (x-6965B)
Produkt spesifikasjon: 006/99-K-02 Utg. 1		
Råvare (komponent) spesifikasjon: HyTemp 4454: 366-K-197, DOA: 366-K-068		
RDX : MIL-R-398C Am. 4, Type II		
Emballasje: Pappfat		

Råvarer benyttet:

Sats nummer	Lot.nummer	Type	Mengde
Sats 9		PBXW-17	220 kg

Anmerkninger:

Rapporteres av FoU.¹

¹Distibusjon: A.Sværen/ G.Veirud, R.Sørli, B. Berhardsen , FoU-arkiv

DYNO

Dyno Nobel

Defence Products
N-3476 Saetre
Norway

Produksjon og analysemelding fra FoU-avdelingen

Dato: 18. september 2000

Produkt: PBXW-17		
Mengde: 50 kg	Charge nummer: 06/00	Lot nummer: NSI00H0006E
Kunde: Karl Diehl Mariahütte, Tyskland	Lev. tid: Uke 38/00	Best.nummer: 319336 (x-6965B)
Produkt spesifikasjon: 006/99-K-02 Utg. 1		
Råvare (komponent) spesifikasjon: HyTemp 4454: 366-K-197, DOA: 366-K-068 RDX : MIL-R-398C Am. 4, Type II		
Emballasje: Pappfat		

Råvarer benyttet:

Sats nummer	Lot.nummer	Type	Mengde
Sats 8		PBXW-17	220 kg

Anmerkninger:

Rapporteres av FoU.¹

¹Distibusjon: A.Sværen/ G.Veirud, R.Sorli, B. Berhardsen , FoU-arkiv